
Alloplectus martinianus, a New Species of Gesneriaceae from Ecuador

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ABSTRACT. *Alloplectus martinianus*, a new species of Gesneriaceae from Ecuador, is described. The species is distinctive for its long narrow leaves, densely villous short corollas, and unusual reticulations on the adaxial epidermis of the leaf.

This paper describes a new species of *Alloplectus* from Ecuador that is readily distinguished because of the combined character states of long narrow leaves, short pedicels, densely villous short corollas, and unique reticulations on the adaxial epidermis of the leaves.

Alloplectus Martius has a history of taxonomic confusion with *Columnea* L. (Wiehler, 1983), which has not been resolved with modern molecular techniques (Smith & Sytsma, 1994a, b, c; Smith & Carroll, 1997). These two genera are distinguished by the dehiscent fleshy fruits in *Alloplectus* and indehiscent berries in *Columnea* (Wiehler, 1973, 1983). This diagnostic fruit character is useful on fresh and live material, but plants without fruits are frequently difficult or impossible to identify. In addition, herbarium specimens with only immature dried fruits are difficult to determine as being dehiscent or not. Such confusion has been the case for the species described here. Specimens of this species have been attributed to *Columnea* by the author and by other specialists in the Gesneriaceae. The occurrence of fruits in one specimen (*Gentry 12590*) shows the dehiscence typical of *Alloplectus* and has permitted the proper placement of this species.

Alloplectus martinianus J. F. Smith, sp. nov.

TYPE: Ecuador. Napo: road from Baeza to Tena, 5 km S of Baeza, mountain rain forest, 26 June 1983, *Bohlin & Bohlin 698* (holotype, US; isotype, GB). Figure 1.

Differt ab *Alloplecto boliviano* (Britton) Wiehler pedicellis brevioribus, foliis angustioribus.

Epiphytic or terrestrial, woody-based herbs with erect stems to 1.5 m long, 3–8 mm diam. (Fig. 1A), red-brown, appressed trichomes sericeous, denser toward apex. Internodes 0.4–5.0 cm long, leaf scars raised from the nodes. Leaves opposite, subequal,

blades lanceolate, 4.0–13.9 × 1.1–3.3 cm, apices acute, bases cuneate, margin entire or serrulate, adaxially green, pinnose with reticulations on epidermis (Fig. 1F) (reticulations may not be prominent on all leaves), abaxially green to rose, densely tomentose with yellow trichomes, pubescence of veins abaxially colored pink or red-purple. Petioles 0.5–2.4 cm, tomentose. Inflorescences of 2–5 flowers in axils of both leaf pairs (Fig. 1A), floral bracts lanceolate, 3.0 × 1–1.3 mm, apex acute, margin entire, tomentose. Pedicels 0.5–0.9 cm, erect in leaf axil, tomentose. Calyces campanulate, clasping corolla at base, lobes elliptic, equal in size, 0.8–1.8 × 0.20–0.50 cm, apex acute, margins entire or serrulate at apex, green, exterior and interior tomentose. Corollas yellow, gibbous at base, slightly ventricose (Fig. 1B), 1.3–1.7 cm long, 1.5–3.0 mm at base, 3.5–3.8 mm at widest point, 2.5–2.6 mm before limb, exterior densely villous with golden-yellow trichomes, interior mostly glabrous but with white capitate trichomes dorsally and distally (Fig. 1C). Lobes equal, 2.0 × 2.0 mm, semi-orbicular. Stamens included, filaments white, glabrous, adnate to corolla base for 2.5 mm then connate for 3.5 mm at base, anthers quadrate, 1.0–2.0 × 1.0–2.0 mm. Nectaries of 2 dorsal fused glands. Ovaries tomentose, 3.0 mm long, conical, styles reddish, glabrous to slightly pubescent at base, stigmas stomatophytic, papillose. Fruits globose, 6–10 mm diam., red, villous. Seeds fusiform, red-brown to almost black, twisted, striate, 0.8 mm long.

Distribution. Known only from 1200 to 2500 m elevation in Ecuador from a small geographic area in Napo province; flowering March to December and fruiting in May to November.

Alloplectus martinianus is superficially and morphologically similar to *Columnea formosa* (C. V. Morton) C. V. Morton, to which specimens were earlier attributed. It differs from the latter species in several respects. First of all, the fruits are apparently dehiscent, although this character state was not immediately obvious from the initial specimens examined. However, it was clear from the fruits of *Gentry 12590* that this is a species of *Alloplectus*. Additionally, the pedicels of the new species are

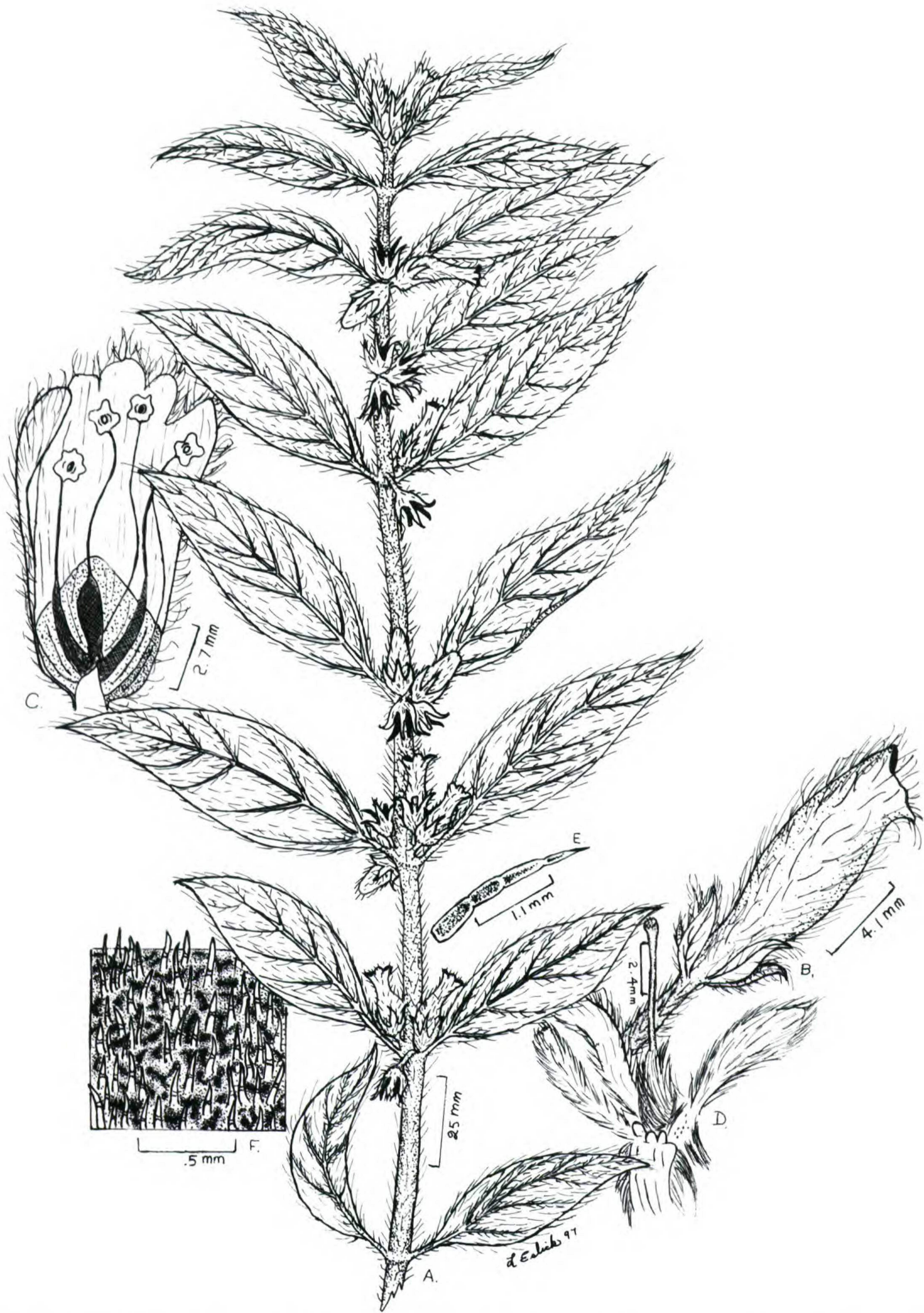


Figure 1. *Alloplectus martinianus* J. F. Smith. —A. Habit. —B. Flower with calyx cut open to show corolla base. —C. Corolla interior with stamens. The bases of the stamens were torn in the specimen this illustration was based on, and therefore do not reflect the full degree of connation seen in other flowers (see text for full description). —D. Gynoecium with calyx and nectaries. —E. Uniseriate trichome. —F. Adaxial leaf surface. From *Bohlin & Bohlin* 698.

conspicuously shorter than in *C. formosa* and other species of *Columnea*, and the corolla is smaller and shorter than in most species of *Alloplectus*. *Alloplectus martinianus* is also superficially similar to *Alloplectus bolivianus* (Britton) Wiehl. However, the latter species has longer pedicels, corollas, and petals and broader leaves. Additionally, *A. bolivianus* is generally much less pubescent than *A. martinianus*. Lastly, the reticulate epidermal pattern readily seen on many specimens at 10× magnification on the adaxial surface of the leaves is distinctive and not known from any other species of *Alloplectus*. It should be noted that this feature is not always present on all leaves of a collection. The pattern may be influenced by the age and condition of the leaf at the time of collection, as well as how it is dried. However, all specimens examined to date show at least a portion of one leaf from each specimen with the reticulations. The specific epithet honors the author's friend and companion, Steven G. Martin, of Boise, Idaho.

Paratypes. ECUADOR. **Napo:** Cosanga, 20 km S of Baeza, 20 Sep. 1977, *Maas, Berg & ter Welle 3008* (QCA, SEL, U); Río Panteor, SW of Borja, 22 Sep. 1980, *Holm-Nielsen et al. 26710* (K); Quijos, Sierra Azul, 2 May 1992, *Alvarez, Mosquera, Proaño & Viteri 396* (QCNE, US); 16.5 km NNE of Santa Rosa on road from Baeza to Lago Agrio, 19 Oct. 1971, *MacBryde 747* (US); junction Baeza–Lago Agrio road with Río Azuela, 27 Mar. 1972, *Dwyer & MacBryde 9636* (US); 23 km E of El Chaco, Quito–Lago Agrio road, 7 Nov. 1974, *Gentry 12590* (NY, US); 2.5 km N of Cosanga, 18 Feb. 1978, *Kirkbride & Chamba 4168* (NY, US); Baeza, 9 May 1990, *Palacios & Freire 5002*

(QCNE, US); 17 km from Cosanga, 24 Aug. 1990, *Jaramillo, Grijalva & Grijalva 12142* (QCA); 11 km E of El Chaco, 22 Mar. 1989, *Huttel 1634* (QCA, QCNE); Santa Lucía de Bermejo, 15 Dec. 1993, *Alvarez, Brito, Romero & Guerrero 969A* (QCNE); environs of Baeza, Jan. 1979, *Besse, Tan & Halton 1156* (SEL).

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Literature Cited

- J. F. Smith & C. L. Carroll. 1997. A cladistic analysis of the tribe Episcieae (Gesneriaceae) based on *ndhF* sequences: Origin of morphological characters. *Syst. Bot.* 22: 713–724.
- & K. J. Sytsma. 1994a. Evolution in the Andean epiphytic genus *Columnea* (Gesneriaceae): Part I. Morphological variation. *Syst. Bot.* 19: 220–235.
- & ———. 1994b. Evolution in the Andean epiphytic genus *Columnea* (Gesneriaceae): Part II. Chloroplast DNA restriction site variation. *Syst. Bot.* 19: 317–336.
- & ———. 1994c. Molecules and morphology: Congruence of data in *Columnea* (Gesneriaceae). *Pl. Syst. Evol.* 194: 37–52.
- Wiehler, H. 1973. One hundred transfers from *Alloplectus* and *Columnea* (Gesneriaceae). *Phytologia* 27: 309–328.
- . 1983. A synopsis of the neotropical Gesneriaceae. *Selbyana* 6: 1–219.